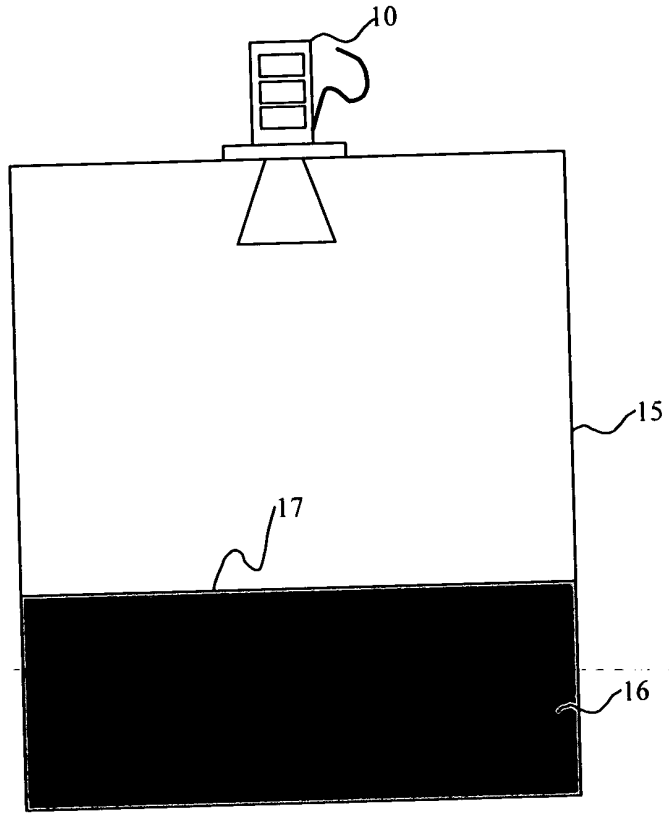


Fig. 1

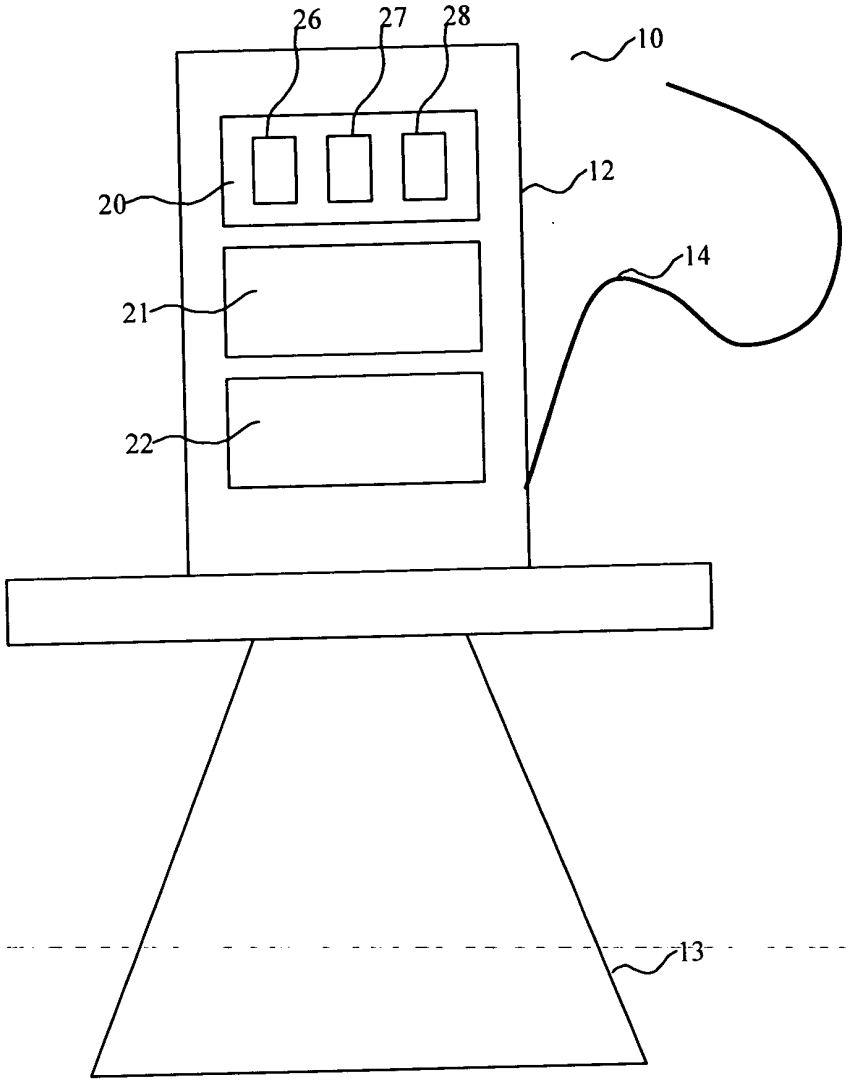


Fig. 2

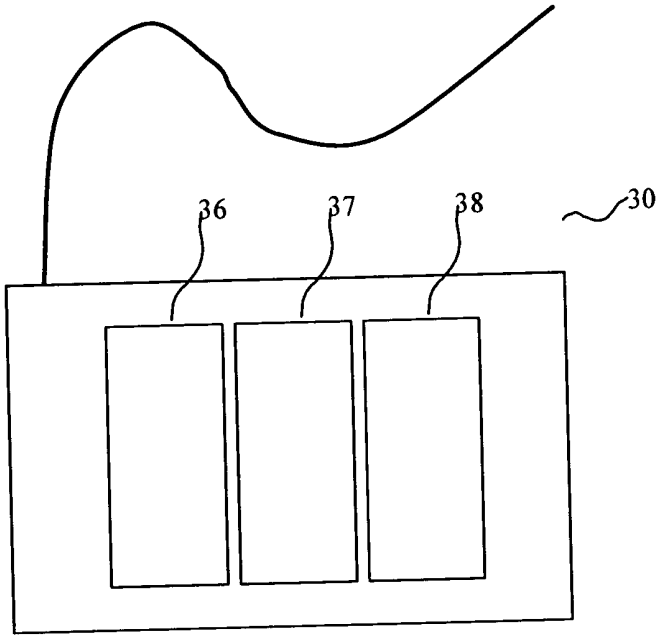


Fig. 3

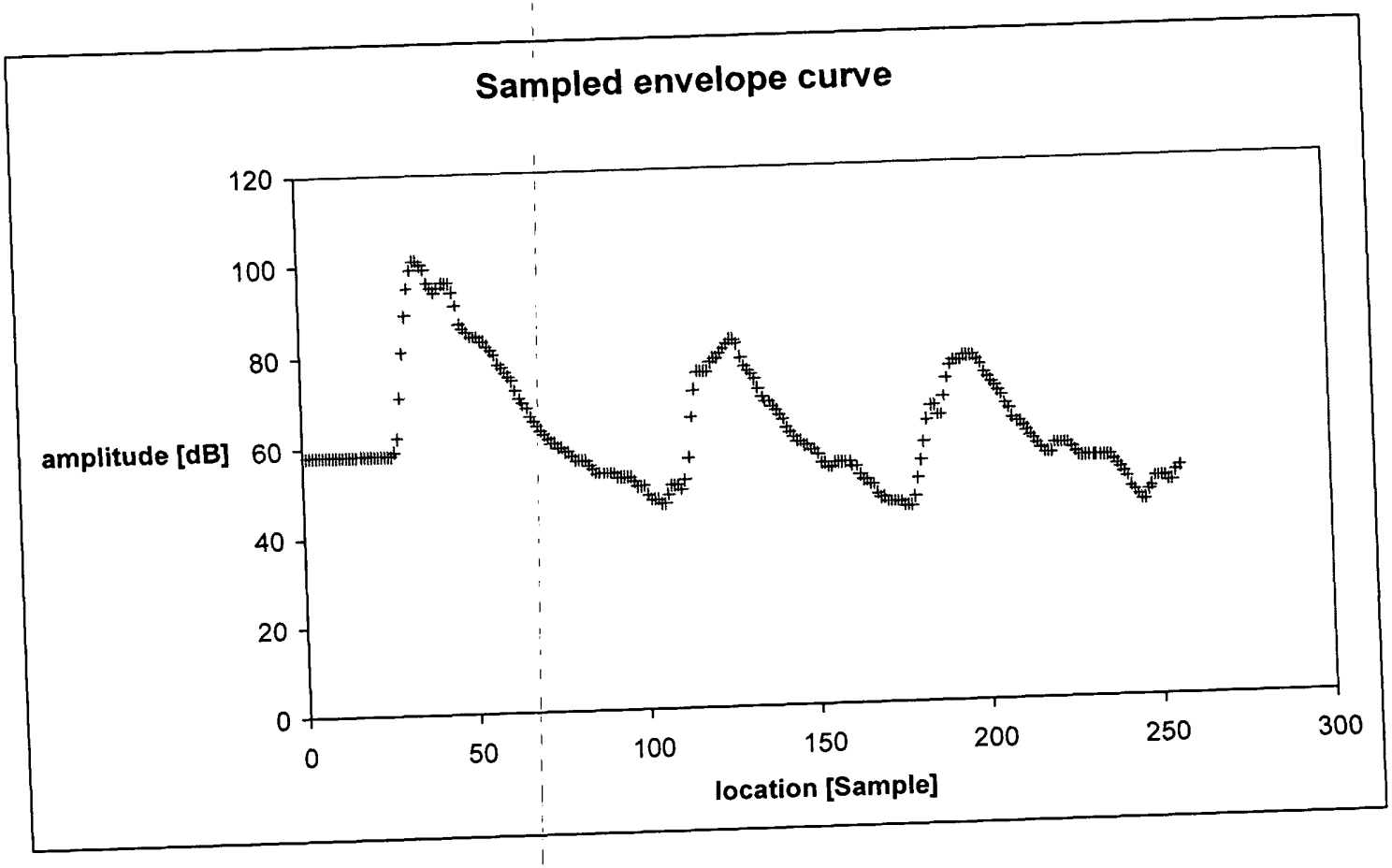

Sampled envelope curve
amplitude [dB]
120
100
80
60
40
20
0
0
50
100
150
200
250
300
location [Sample]

Fig. 4

curve number 543 11.07.2002 14:11:10	curve number 544 11.07.2002 14:11:25	curve number 545 11.07.2002 14:11:41	curve number 546 11.07.2002 14:11:55	curve number 547 11.07.2002 14:12:11	curve number 548 11.07.2002 14:12:25	curve number 549 11.07.2002 14:12:40	curve number 550 11.07.2002 14:12:55	curve number 551 11.07.2002 14:13:09	curve number 552 11.07.2002 14:13:24
68	68	65	65	64	62	60	62	62	62
67	67	65	65	63	61	58	62	62	62
66	67	65	64	62	60	57	61	61	60
65	65	64	63	61	58	56	59	59	58
64	64	63	62	60	58	54	58	57	57
62	62	62	61	58	57	54	57	56	56
61	61	60	59	57	56	55	56	57	60
60	60	59	58	57	56	57	60	65	70
59	59	59	57	57	58	65	69	74	78
59	59	58	58	63	67	73	77	80	83
58	58	58	65	71	75	79	82	85	86
58	64	66	73	77	81	84	85	86	87
62	72	74	79	82	85	86	87	86	87
70	78	80	84	85	86	86	86	86	86
77	82	84	85	85	86	86	86	85	85
82	84	85	85	85	85	85	85	84	83
84	85	85	85	85	85	84	84	82	81
84	85	84	83	83	83	83	82	79	78
84	84	83	81	82	82	82	81	77	75
83	83	82	80	81	82	81	80	76	73
82	82	81	80	81	81	81	79	75	71
82	81	81	80	81	81	81	79	74	70
82	81	81	81	81	81	80	78	72	69
82	81	81	81	81	81	80	77	71	68
82	81	81	81	81	80	78	76	71	68
82	81	81	81	80	79	77	75	71	71
81	80	80	79	79	78	77	75	72	72

Fig. 5

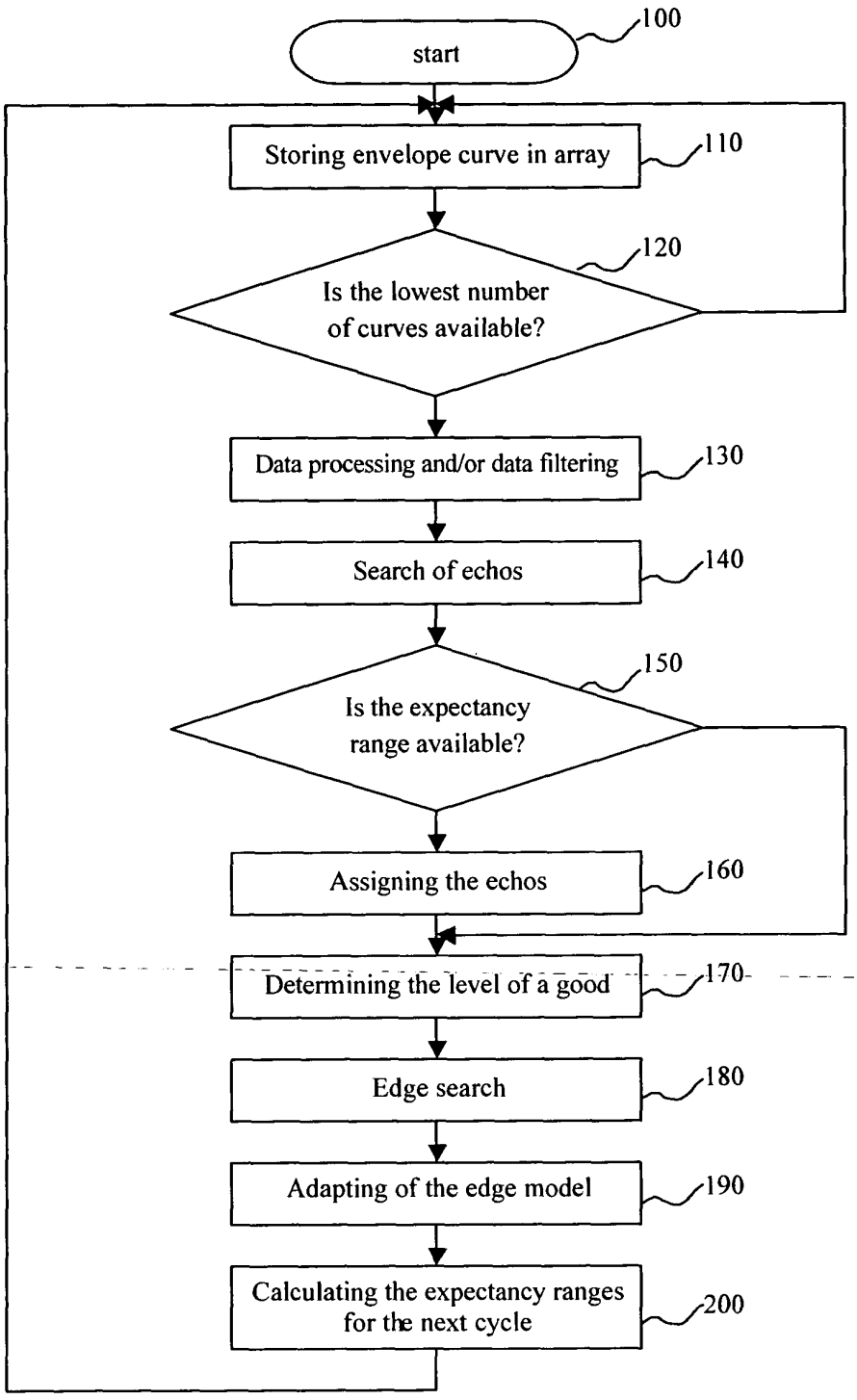
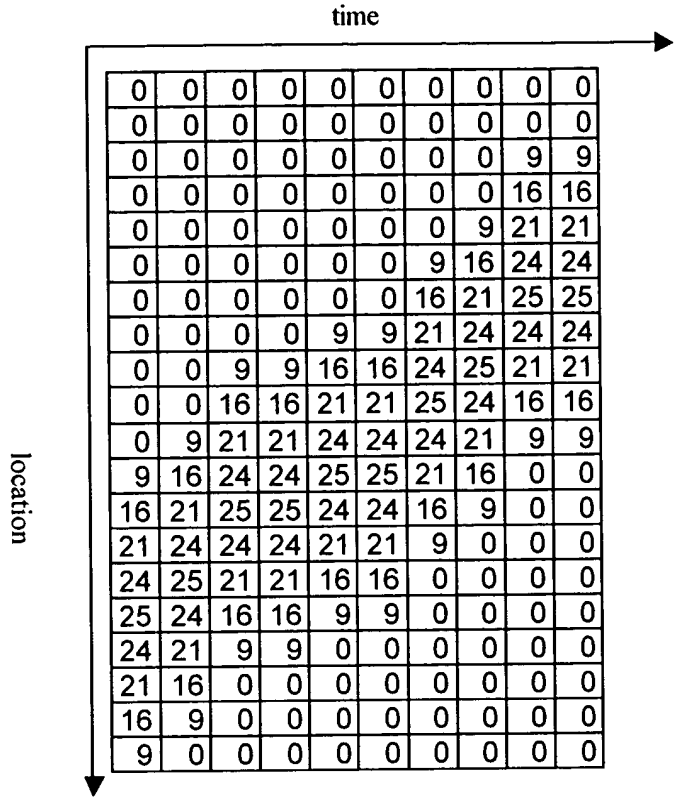

start
100
Storing envelope curve in array
110
Is the lowest number of curves available?
120
Data processing and/or data filtering
130
Search of echos
140
Is the expectancy range available?
150
Assigning the echos
160
Determining the level of a good
170
Edge search
180
Adapting of the edge model
190
Calculating the expectancy ranges for the next cycle
200

Fig. 6



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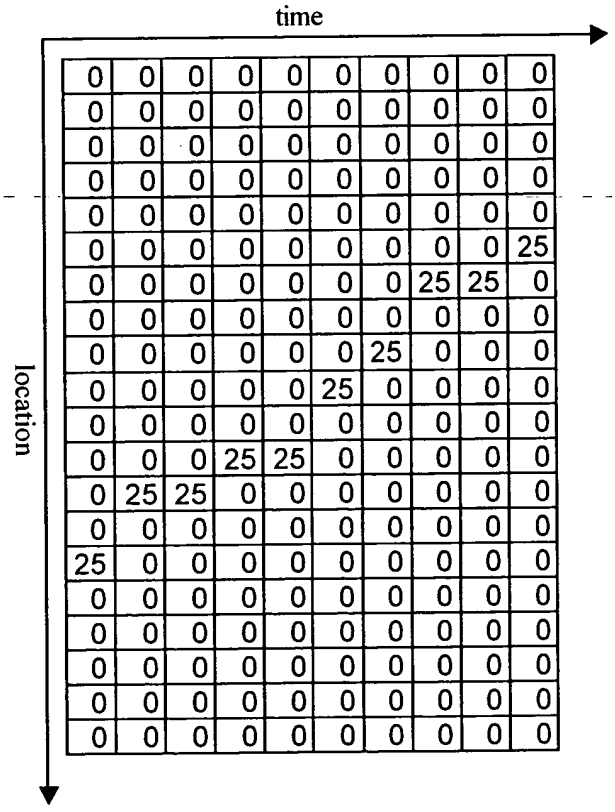
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	9	9
0	0	0	0	0	0	0	0	16	16
0	0	0	0	0	0	0	9	21	21
0	0	0	0	0	0	9	16	24	24
0	0	0	0	0	0	16	21	25	25
0	0	0	0	9	9	21	24	24	24
0	0	9	9	16	16	24	25	21	21
0	0	16	16	21	21	25	24	16	16
0	9	21	21	24	24	24	21	9	9
9	16	24	24	25	25	21	16	0	0
16	21	25	25	24	24	16	9	0	0
21	24	24	24	21	21	9	0	0	0
24	25	21	21	16	16	0	0	0	0
25	24	16	16	9	9	0	0	0	0
24	21	9	9	0	0	0	0	0	0
21	16	0	0	0	0	0	0	0	0
16	9	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0

Fig. 7



0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	25
0	0	0	0	0	0	0	25	25	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	25	0	0	0
0	0	0	0	0	25	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	25	25	0	0	0	0	0
0	25	25	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0

Fig..8

65	64						
		63		66			
			68		64		63
						62	
33		40		22	31	32	
	20		33				30

Fig. 9

1	1						
		1		1			
			1		1		1
						1	
2		2		2	2	2	
	2		2				2

Fig. 10

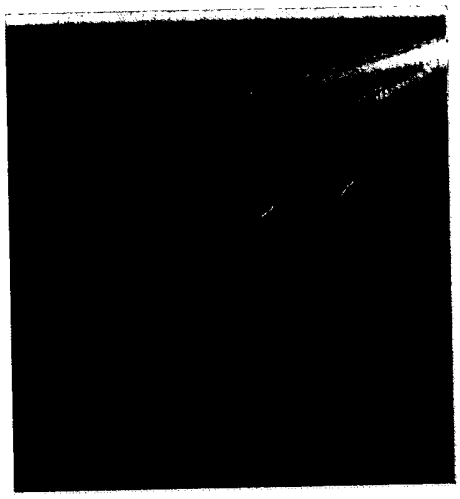


Fig. 11

Fig. 12

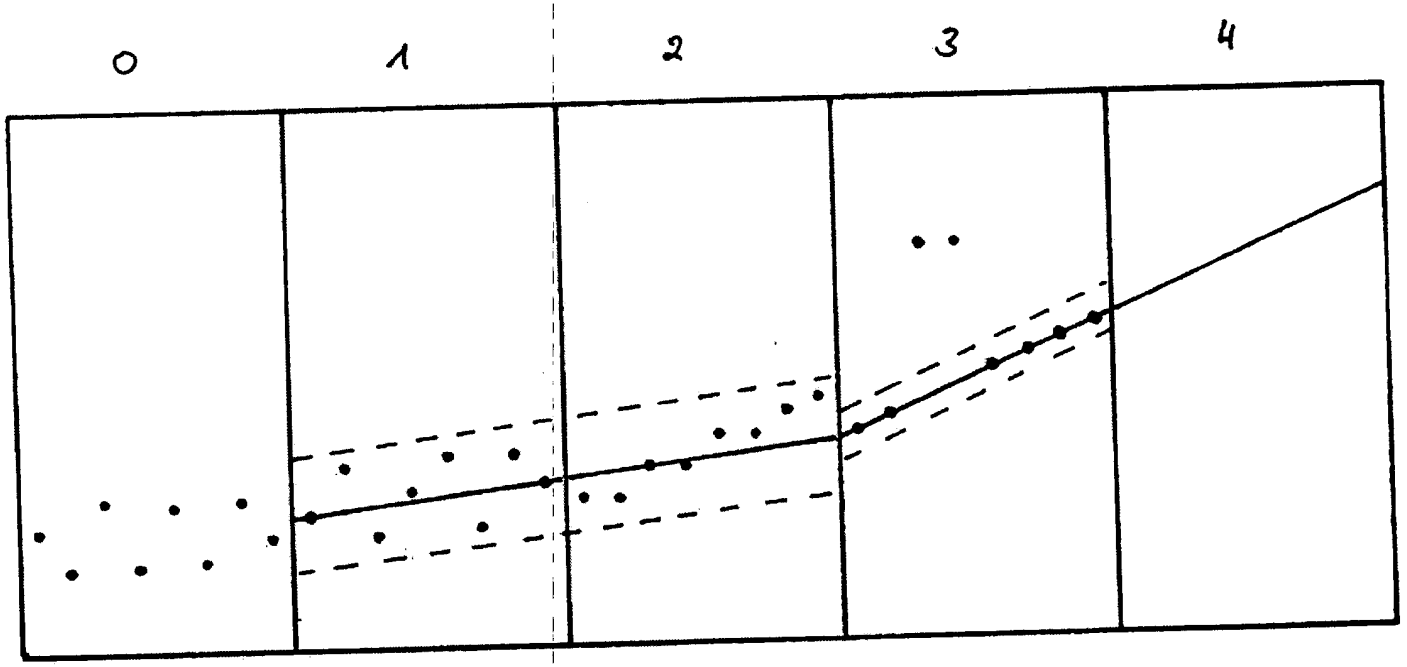


Fig. 13